

App. No. 10/058,437
Art Unit: 1742

IN THE CLAIMS:

1.-3. (canceled)

4. (currently amended) ~~A method according to claim 2,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system;

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time; and

c) agitating the electrolyte,

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the agitating step comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies during selected time intervals of the waveform period.

5. (currently amended) ~~A method according to claim 2,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system;

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time; and

c) agitating the electrolyte,

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the agitating step comprises subjecting the electrolyte to stirring induced by a mechanical impeller and to

App. No. 10/058,437
Art Unit: 1742

sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies during selected time intervals of the waveform period.

6. (currently amended) A method according to claim 1, A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time,

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and further comprising the step of agitating the electrolyte only during time periods between pulses of electrical potential.

7. (previously presented) A method according to claim 6, wherein the agitating step comprises stirring the electrolyte.

8. (previously presented) A method according to claim 6, wherein the agitating step comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies during selected time intervals of the waveform period.

9. (previously presented) A method according to claim 6, wherein the agitating step comprises subjecting the electrolyte to stirring induced by a mechanical impeller and to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies during selected time intervals of the waveform period.

10.-12. (canceled) A method according to claim 1, wherein the subjecting step further comprises:

App. No. 10/058,437
Art Unit: 1742

subjecting the anode-electrolyte system to potential and current pulses; and allowing the pulse amplitude of the potential pulses to increase until the pulse amplitude reaches the target voltage.

11. (currently amended) A method according to claim 10, wherein the current setting maintains a constant current until the pulse amplitude reaches the target voltage.

12. (currently amended) A method according to claim 11, wherein the subjecting step further comprises continuing to subject the anode-electrolyte system to current pulses for a hold time after the pulse amplitude reaches the target voltage until the current flow through the anode-electrolyte system drops to a predetermined level.

13. (currently amended) ~~A method according to claim 1, A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:~~

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises: delivering the pulses of electrical potential having a pulse amplitude, and pulse width and a duty cycle to the anode-electrolyte system; and modifying the duty cycle of the potential pulses as the pulse amplitude approaches the target voltage.

App. No. 10/058,437
Art Unit: 1742

14. (previously presented) A method according to claim 13, wherein the modifying step further comprises decreasing the duty cycle as the pulse amplitude approaches the target voltage.

15. (currently amended) ~~A method according to claim 1,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

- a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and
- b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises: delivering the pulses of electrical potential having a pulse amplitude, and a frequency to the anode-electrolyte system; and
modifying the pulse width and the pulse frequency as the pulse amplitude approaches the target voltage.

16. (previously presented) A method according to claim 15, wherein the subjecting step further comprises delivering the pulses of electrical potential to the anode-electrolyte system for a predetermined hold time after achievement of the target voltage until the current flow through the anode-electrolyte system has dropped to a predetermined level.

17. (previously presented) A method according to claim 15, further comprising the step of agitating the electrolyte in the time between delivered pulses of electrical potential.

18. (previously presented) A method according to claim 17, wherein the agitating step further comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies.

19. (currently amended) ~~A method according to claim 1,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

- a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and
- b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises:

delivering the potential pulses having a pulse amplitude, and pulse width, and a frequency to the anode-electrolyte system; and
decreasing the pulse width and decreasing the frequency of the pulses of electrical potential as the pulse amplitude approaches the target voltage.

20. (previously presented) A method according to claim 19, wherein the subjecting step further comprises delivering the pulses of electrical potential to the anode-electrolyte system for a predetermined hold time after achievement of the target voltage until the current flow through the anode-electrolyte system has dropped to a predetermined level.

21. (previously presented) A method according to claim 19, further comprising the step of agitating the electrolyte in the time between delivered pulses of electrical potential.

App. No. 10/058,437
Art Unit: 1742

22. (previously presented) A method according to claim 21, wherein the agitating step further comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies.

23. (currently amended) ~~A method according to claim 1,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises:

delivering the pulses of electrical potential having pulse amplitudes and pulse widths to the anode-electrolyte system; and

decreasing the pulse width of the potential pulses as the pulse amplitude approaches the target voltage.

24. (previously presented) A method according to claim 23, wherein the subjecting step further comprises delivering the pulses of electrical potential to the anode-electrolyte system for a predetermined hold time after achievement of the target voltage until the current flow through the anode-electrolyte system has dropped to a predetermined level.

25. (previously presented) A method according to claim 23, further comprising the step of agitating the electrolyte in the time between delivered pulses of electrical potential.

App. No. 10/058,437
Art Unit: 1742

26. (previously presented) A method according to claim 25, wherein the agitating step further comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies.

27. (canceled)

28. (currently amended) ~~A method according to claim 27,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;

wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises delivering the pulses of electrical potential to the anode-electrolyte system for a predetermined hold time after achievement of the target voltage until the current flow through the anode-electrolyte system has dropped to a predetermined level, and further comprising the step of agitating the electrolyte in the time between delivered pulses of electrical potential.

29. (previously presented) A method according to claim 28, wherein the agitating step comprises subjecting the electrolyte to sound energy at a frequency in the range from ultrasonic frequencies to audible frequencies.

30. (currently amended) ~~A method according to claim 1,~~ A method of anodizing a pressed and sintered valve metal anode to a target formation potential, comprising:

a) immersing the pressed valve metal anode in an anodizing electrolyte to wet the anode and develop an anode-electrolyte system; and

App. No. 10/058,437
Art Unit: 1742

b) subjecting the anode-electrolyte system to potential pulses of electrical potential that are ramped up from a starting voltage to a target voltage over a formation time;
wherein said anodizing electrolyte is maintained at about 40 degrees Celsius or less during the anodizing process, and wherein the subjecting step further comprises:
delivering the pulses of electrical potential and current pulses having pulse amplitudes and pulse widths to the anode-electrolyte system; and decreasing the peak height of the current pulses as the amplitude of the pulses of electrical potential approach the target voltage.

31.-40 (canceled)